

SECTION 6

FLOORING



FLOORING

Choosing a Timber Floor

Timber Grades and Species

Engineered Hardwood Flooring

Premiere Oak by Hurfords Flooring

Parquetry

Finishing

Care and Maintenance

TQ TDS 11 - Tongue and Groove Flooring

TQ TDS 31 - Acceptable Appearance from
timber floors

ATFA - What to expect from your timber floor

Boral - Engineered Flooring





Where to begin.

CHOOSING A NEW FLOOR MADE EASY.

Having a timber floor supplied by Finlayson's is the easy answer when you need the job done on time and within budget.

EXPERIENCE AND SERVICE

From our professional customer service team, to the master supply team who offer our customers high-quality flooring options at affordable prices, you can trust we're all focused on your needs.

PRODUCT AND VALUE

Strong relationships with premium suppliers Australia wide and Finlayson's own manufactured product range provides maximum choice, purchasing power and product back-up.

DURABILITY AND QUALITY

Nothing delivers enduring beauty and strength like the superior timber products supplied by Finlayson's.

PEACE OF MIND

With Finlayson's you can have peace of mind knowing that we are the builders and renovators choice since 1875.

OUR SHOWROOM

Choosing a new floor can be difficult. With so many options now available, the process can sometimes be overwhelming. To help streamline the process, we have over 300m² of flooring to walk on at our East Brisbane showroom including solid strip traditional timbers, engineered flooring, parquetry, laminate and vinyl planks.

Located at our East Brisbane Trade Base, 135 Wellington Road, you will find one of Queensland's largest and most extensive timber flooring showrooms. Showcasing beautiful Australian hardwood flooring as well as many other varieties of flooring systems and options, visualizing how the products will look in your own project will be one step closer.

OUR FLOORING CONSULTANTS

With many decades of flooring knowledge, our friendly consultants can literally walk you through the options, help with species selection and above all advise on the correct methods to suit your needs.

Together with our wide variety of products and floor staff expertise, Finlayson's Showroom has been the successful one-stop destination for home owners, builders, designers and renovators for many years.



ALL PRICES INCLUDE GST. Ask in store about our Price Guarantee.



THE RIGHT FLOOR FOR THE RIGHT SITUATION.

Timber flooring comes in many different forms and can be installed in a variety of ways.

TIMBER ENGINEERED FLOORS - Our most popular floors

The term engineered flooring includes a wide range of products - mostly pre-finished timber boards that are either glued down or installed as a floating floor. Perfect for small renovations- engineered floors can be laid quickly with very little disruption. Perfect for apartments and high rise installations, these products work well in conjunction with acoustic underlays and sound barriers.

TRADITIONAL 19mm TONGUE AND GROOVE

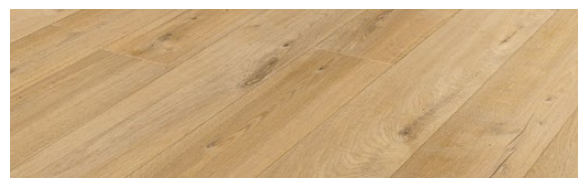
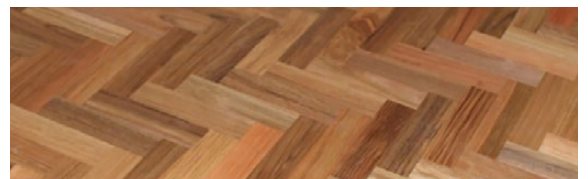
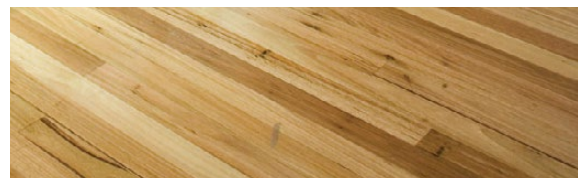
The most popular and versatile flooring system. A 19mm solid timber flooring plank, nailed down to a timber sub floor and then sanded and finished on site. Traditional tongue and groove flooring can be installed over a concrete slab after the installation of ply sheeting or timber battens.

SOLID OVERLAY FLOORING

Overlays are a solid timber plank, generally thinner and shorter in length. This system is designed to be glued to a level sub floor including concrete slabs and existing timber floors. Sanded and finished on site.

PARQUETRY

Solid blocks of raw timber individually glued down to either concrete or timber sub floors, Parquetry can be laid in any pattern creating beautiful and unique designs. Like solid strip flooring Parquetry is sanded and finished on site.





FINE TUNING - CHOOSING WHICH GRADE.

Even subtle differences can personalise the look of a new floor.

Most products are available with different aesthetic options. This will include many different timber species; various plank widths, grades of timber and in the case of pre-finished products, gloss levels. A raw or unfinished floor has the advantage of selecting any type of coating.

SELECT GRADE

A select grade of timber has a minimum amount of knots, gum vein and other natural features. With the majority of this character removed a select grade lends itself to a more contemporary scenario.

STANDARD GRADE

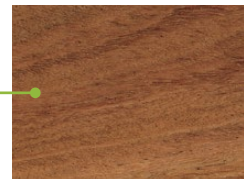
This grade has a more distinctive natural appearance with a medium amount of feature still included in the blend. The standard grade appeal is in its unique variation with the added benefit of being more cost effective than a select grade.

COVER / NATURAL GRADE

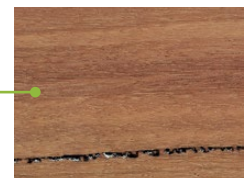
A rustic, colonial looking blend with a large amount of knots, face checking, gum veins and insect trails. A cover grade is often used in very traditional settings but also works well in a contemporary installation as a contrasting medium.

* Small images and samples of flooring do not provide an accurate picture of the colour, grades and finish variations. Finlayson's recommend visiting their flooring showroom to see larger floor areas of each floor type.

Select*



Standard*



Cover*



INSTALLATION GUIDE	TIMBER SUB FLOORS	CONCRETE SLAB	TILES
TRADITIONAL 19mm T&G	Nailed and Glued	On Ply or Battens	X
TIMBER ENGINEERED BOARDS	Floating or Glued	Floating or Glued	Floating
LAMINATE FLOORING	Floating	Floating	Floating
PARQUETRY	Glued	Glued	X
SOLID OVERLAY	Glued	Glued	X
VINYL PLANKS	Glued or Loose Layed	Glued or Loose Layed	Loose Layed



BRUSHBOX

Brushbox has long been sought after for its unique properties and aesthetic qualities. It has a fine and even texture with a beautiful, rich colour. It can vary from pale pinkish grey to rich reddish brown.

Hardness Janka rating 9.5



SPOTTED GUM

Spotted Gum. The word "spotted" refers to the soft mottled colour caused by weathering of the outer tree as it sheds elliptical strips of bark. This colour varies from pale grey browns and soft creams to a rich chocolate brown. A very tough timber, its frequent wavy grain can produce an attractive and highly valued fiddleback effect.

Hardness Janka rating 11.0



BLACKBUTT

Blackbutt is a commonly grown hardwood that has attractive colouring from cream to pale brown and an occasional tinge of pink.

Hardness Janka rating 9.1



JARRAH

Jarrah is one of the few commercial species from Western Australia. Jarrah is renowned world-wide for its density, resistance to insect attack and beautiful rich red colour which deepens over time into a soft burgundy. Jarrah's beautiful colouring and exceptional hardness are a perfect combination for commercial and residential flooring.

Hardness Janka rating 8.5



TASMANIAN OAK

Tasmanian Oak is a combination of three Eucalypt species commonly found in Tasmania. Together they produce a blend of beautiful colouring from pale cream to pink and reddish brown. Tasmanian Oak logs are quarter sawn to produce an extremely straight and even grain.

Hardness Janka rating 4.9



TURPENTINE

Turpentine is a highly durable hardwood species that is commonly grown in New South Wales and southern Queensland. In colour, it varies from pale to dark reddish brown through to deep chocolate brown. It has a straight grain and coarse but even texture.

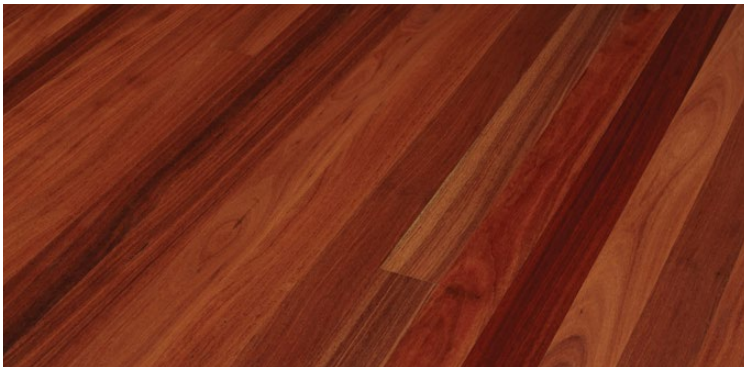
Hardness Janka rating 12.0



SYDNEY BLUE GUM

Sydney Blue Gum is a well-known timber found on the east coast of Australia. It has a straight grain that is sometimes interlocked. Its distinctive colour varies from soft pinks to dark pinks and red browns.

Hardness Janka rating 9.0



RED IRON BARK

Heartwood dark red. Sapwood pale yellow. Texture medium and even. Grain interlocked.

Hardness Janka* rating 8.5



GREY IRON BARK

Heartwood colour varies from pale brown to dark chocolate brown and also dark red. Texture moderately coarse and even. Grain usually interlocked.

Hardness Janka* rating 14

* Small images and samples of flooring do not provide an accurate picture of the colour, grades and finish variations. Finlayson's recommend visiting their flooring showroom to see larger floor areas of each floor type.



AUSTRALIAN BEECH

Australian Beech is a beautiful combination of highland timbers, carefully selected to create a unique colour that ranges from pale brown and golden hues to a light cream with a slightly pink tint. These tonal variations found in Australian Beech are one of its sought-after features.

Hardness Janka rating 7.1



FOREST REDS

Forest Reds is a blend of medium to large hardwoods harvested from the coastal regions. Timber colour ranging from pale pinks to deep rich reds, which when blended in flooring, give a particularly warm, luxurious appearance.

Hardness Janka rating 9.0



STRINGYBARK

Stringybark is a blend of eucalyptus varieties native to various areas of New South Wales. The texture of Stringybark is moderately fine and even with a straight grain. It is a light coloured blend ranging from pale yellow through to golden hues and light browns.

Hardness Janka rating 8.0



TALLOWOOD

Heartwood yellowish brown with a tinge of olive green. Sapwood usually distinctively paler. Texture moderately coarse but even. Grain often interlocked. The wood has a greasy feel and can effect the strength of the bond obtainable with adhesives. An unusual distinguishing characteristic for a eucalypt, is the complete absence of gum veins.

Hardness Janka rating 9



RED MAHOGANY

Red Mahogany is an extremely dense hardwood species, with stunning pale to deep, dark red colouring. Its density and rare colouring have made it a prestigious timber species that is highly sought after. It is a species that lends itself well to good, consistent grading for a uniform look. Red Mahogany represents a good alternative to Jarrah which has become more difficult to source.

Hardness Janka* rating 12.0



ARAUCARIA (HOOP PINE) FLOORING

The timeless look and feel of traditional Araucaria (hoop pine) flooring has been a beautiful feature in Queensland homes for over a hundred years.

Finlayson's are a chain of custody certified organization and the Araucaria harvested at their own mills ensures we have a constant supply of the highest quality flooring.

With rich golden tones and unique character, Hoop pine flooring is available in a number of different board widths in both a clear or knotty grade.



FRENCH AND AMERICAN OAK

International species are an aesthetic alternative to the diverse range of Australian hardwood colours and textures.

With a low level of feature and a generally uniform blend of cream tones, both French and American Oak are a perfect blank canvas for tinting and lime washing.

From a rich ebony stain to the French provincial look of lime washing, the Oaks can be transformed into almost any tone.

Supplied in engineered, solid strip and parquetry options.

Engineered for
ease of use.



ENGINEERED HARDWOOD FLOORING.

Engineered flooring includes a
diverse range of products.

Most commonly this is a thin slice of timber with a ply backing. Supplied in pre-finished planks, this style of flooring has many benefits. Often used in high rise and apartment complexes, engineered floors can be installed in short periods of time minimizing disruption and with no sanding residue

Depending on the thickness of the hardwood, it may be possible to re-sand or resurface like traditional 19mm flooring when required. This feature makes Engineered hardwood products a long term flooring solution.





SPECIFICATIONS



Hurford Flooring offers a high standard of craftsmanship, quality and design in the creation of our engineered floors.

Feature	Elegant Oak	Première Oak
Specie	Genuine French Oak	Genuine French Oak
Core Material	Plantation Eucalyptus Ply	Plantation Eucalyptus Ply
Surface Feature	Intense brush texture	Subtle brush texture
Appearance	Rustic	Rustic
Lamella Wear Layer	4mm	2mm
Certificate Of Origin	Yes	Yes
Overall Thickness	15mm	12mm
Width	189mm	190mm
Length	up to 1830mm	up to 2100mm
Weight	667kg/m ³ or 22kg/carton	667kg/m ³ or 20kg/carton
Coating	German UV cured Acrylic Lacquer incorporating Anti-Scratch technology	German UV cured Acrylic Lacquer incorporating Anti-Scratch technology
Gloss	Ultra Matt	Ultra Matt
Pack Size	2.075m ² /carton	2.394m ² /carton
Edge Profile	Slightly Bevel	Slightly Bevel
Profile	Tongue & Groove	Tongue & Groove
Install Suitability	Floating, direct glued, staples & nailed down	Floating, direct glued, staples & nailed down
Install Sub-Floor Heating	Yes	Yes
Install Over	Wood, concrete, plywood & plywood over concrete	Wood, concrete, plywood & plywood over concrete
Colour Match Accessories	Aluminium trims & MDF wrapped scotia	Aluminium trims & MDF wrapped scotia

Refer to Install Guide for further installation instructions available at hurfordflooring.com.au



ELEGANT OAK AND P



Elegant Oak is a traditional tongue and groove engineered Oak floor. The flooring is manufactured using a genuine French Oak lamella sourced from forests in France.

Elegant Oak combines an intense wire brush textured finish with a chic stain to add a touch of flair to any room without over powering it. The 189mm wide boards have a slight bevel on each edge designed to create depth, adding to the wooden floor charm.

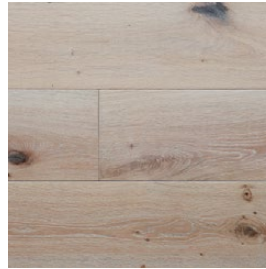
Hurford Flooring also offers RAW, a pre-sanded, square edge and unfinished product, designed to be stained and finished on site. An ideal substitute if the stains in our pre-finished range aren't quite what you're looking for.

SMOULDERED



A rich intense Oak is lightly kissed with a wash of snow to subtly highlight the soft grain and feature.

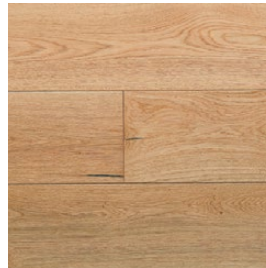
*Our diverse colour range has been
The option to finish your own floor can be*



WHITE WASH



VINTAGE



NATURAL



NUAGE



PREMIÈRE OAK RANGE

selected to accompany any décor.

your choice too, with the selection of RAW.



SMOULDERED



SLATE GREY



BURNT UMBER



URBAN



PremièreOak BY HURFORD FLOORING

In keeping with the same seven stylish colours, Hurford Flooring has produced a more economical product, making it ideal not only for flooring but for walls and ceilings as well. This is due to its thinner 2mm lamella wear layer and 10mm plantation eucalyptus plywood base. Première Oak as a decorative feature wall will complement any residential or commercial space.

The Première Oak surface is finished with a subtle wire brush texture; this combined with the ultra matt coating, creates a defined appearance.

SLATE GREY



A dark mysterious colour giving the Oak powerful undertones that will transform any area into a sophisticated space.



AUSTRALIAN NATIVE
BY HURFORD FLOORING



Blackbutt



Rustic Blackbutt



Blue Gum



Brush Box



Ironbark



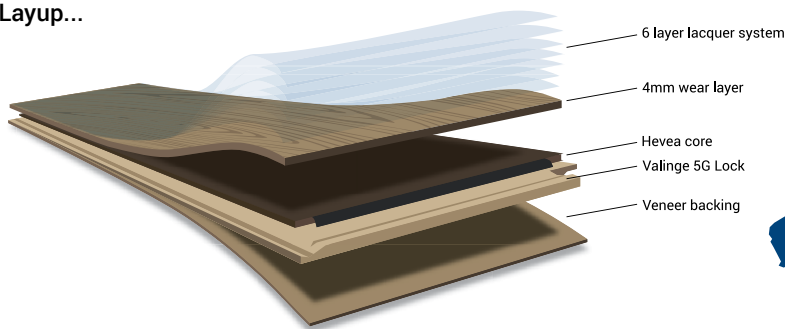
Spotted Gum



AUSTRALIAN NATIVE
BY HURFORD FLOORING

Species	Blackbutt, Blue Gum, Brush Box, Ironbark, Spotted Gum & Rustic Blackbutt	Blackbutt, Spotted Gum & Rustic Blackbutt
Core Material	Hevea	Hevea
Locking System	Välinge 5G Glueless Joining System	Välinge 5G Glueless Joining System
Width	132mm	180mm
Thickness	13.5mm	13.5mm
Wear Layer	4mm	4mm
Length	1,820mm & 2,130mm	1,820mm & 2,130mm
Surface	Smooth Texture	Smooth Texture
Coating	UV cured 6 coat Klumpp system	UV cured 6 coat Klumpp system
Finish	Ultra Matt 10% Gloss	Ultra Matt 10% Gloss
Coverage	1,820mm - 1.922m ² & 2,130mm - 2.249m ²	1,820mm - 1.966m ² & 2,130mm - 2.300m ²
Packaging	8 rows per box, maximum of 2 nested rows	6 rows per box, maximum of 2 nested rows
Matching Accessories	EVERwalk & HUSHwalk Underlays, Trims & Scotia	EVERwalk & HUSHwalk Underlays, Trims & Scotia

Layup...



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Decorative
Alternative.



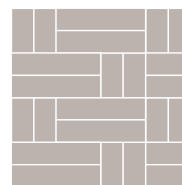
SOLID BLOCK PARQUETRY.

The timeless beauty of Parquetry Flooring can last a life time.

Solid block parquetry is a decorative alternative to strip flooring. Laid as individual pieces, parquetry can form simple patterns or when used with contrasting colours and species-creates attractive geometric designs.

Like strip flooring, parquetry is available a wide range of Australian hardwoods as well as French and American Oak in both select and feature grades.

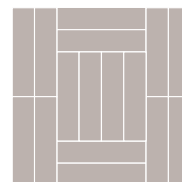
Most commonly glued to concrete slabs, Parquetry can be installed over most level sub floors and is sanded and coated on site with the desired finish.



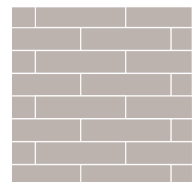
ABBOTT



BASKETWEAVE



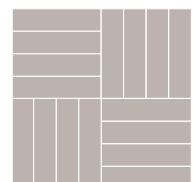
HERITAGE



BRICKBOND



HERRINGBONE



SQUARE ON SQUARE

HARDWOOD STRIP FLOORING

Job lot fee on all flooring orders \$82.50.

60 x 19 mm SECRET NAIL PROFILE T&G END MATCHED

*Prices per Lineal Metre

SPECIES	COVER GRADE	STANDARD GRADE	SELECT GRADE
BLACKBUTT			
SPOTTED GUM			
BLUE GUM			
BRUSH BOX			
FOREST REDS			
IRON BARK			
MIXED HARDWOOD			

85 x 19 mm SECRET NAIL PROFILE T&G END MATCHED

*Prices per Lineal Metre

SPECIES	COVER GRADE	STANDARD GRADE	SELECT GRADE
BLACKBUTT			
SPOTTED GUM			
BLUE GUM			
BRUSH BOX			
FOREST REDS			
IRON BARK			
JARRAH* 80 x 19mm			
MIXED HARDWOOD			

130 x 19 mm SECRET NAIL PROFILE T&G END MATCHED

*Prices per Lineal Metre

SPECIES	COVER GRADE	STANDARD GRADE	SELECT GRADE
BLACKBUTT			
SPOTTED GUM			
BLUE GUM			
BRUSH BOX			
FOREST REDS			
IRON BARK			
JARRAH* TOP NAIL			
MIXED HARDWOOD			

80 x 13 mm OVERLAY FLOORING T&G

*Prices per Lineal Metre

SPECIES	COVER GRADE	STANDARD GRADE	SELECT GRADE
AUSTRALIAN BEECH			
SPOTTED GUM			
ROSE GUM			
BRUSH BOX			
FOREST REDS			
IRON BARK			
BLACKBUTT			

PINE FLOORING

*Prices per Lineal Metre

COVER	TIGHT KNOT	CLEAR FACE
89 x 21		
102 x 21		
140 x 21		
152 x 21		

PLEASE NOTE:

- Hardwood flooring available in random lengths only.
- Boards are T & G end matched for easy joining and minimal wastage.
- Job lot surcharges (see above).
- All species subject to availability at time or ordering.
- All products are graded with the relevant Australian Standards.
- Spotted gum may contain treated sapwood.
- Platform floor construction where floor is laid prior to roof being complete will void all product warranties.
- Prices subject to change.
- For correct handling, storage and fixing instructions for timber flooring, please refer Timber Qld Technical Data Sheet #11, 17, 18, 21 and 31.

The Finishing Touch.



MAXIMISING DURABILITY AND BEAUTY.

The range of finishes exhibit different visual qualities as well as offering different levels of durability.

For any unfinished timber product the final step is choosing one of many floor finishes. There are five broad ranges of finishes available:

OIL BASED

Less wear resistant finish requiring more frequent maintenance, darkens with age, unlikely to edge bond boards, matt to gloss levels.

SOLVENT BORNE POLYURETHANE

High wear resistance, darkens with age, reduced risk of edge bonding boards when applied over appropriate sealer, matt to very high gloss levels.

COMPOSITE (MIX of OIL BASED and SOLVENT BORNE POLYURETHANE)

Less wear resistant finish requiring more frequent maintenance, darkens with age, unlikely to edge bond boards, matt to gloss levels.

WATER BORNE

Moderate to high wear resistance, less darkening with age unlikely to edge bond boards when applied over appropriate sealer, matt to gloss levels.

WAX STYLE FINISH

A two coat system and a more natural style finish with less sheen revealing more textures and earthy tones. Matt to gloss levels but with a more subtle approach.

Caring for your Timber floor.



CARE AND MAINTENANCE.

To keep your floor looking good and wearing well Finlayson's recommends

- Waiting for 48 hours from the application of the last coat of varnish before placing furniture.
- Using door mats to reduce dirt, sand and grit scratches. Hall runners and small rugs are useful to collect dirt that scratches floors.
- Rotating rugs and installing curtains or blinds to reduce direct sunlight which will gradually fade, darken or change the shade of all hardwood flooring.
- Purchasing an antistatic mop to remove dust and dirt.
- Removing high heeled shoes to prevent dents.
- Trimming pets nails and claws to reduce scratches.
- Fitting protective felt pads to furniture to stop scuffing.
- Avoiding harsh detergents, abrasive cleaners, steam mops and over wetting a floor when cleaning (use a pH neutral floor cleaner for stubborn dirt).
- Maintaining an ambient temperature to avoid dryness that may cause gaps, and moisture increases that may cause cupping.





TECHNICAL DATA SHEET
ISSUED BY TIMBER QUEENSLAND

TONGUE & GROOVE TIMBER FLOORING - GENERAL INFORMATION

RECOMMENDED PRACTICE // MARCH 2014

This data sheet outlines the product types covered in the flooring series of data sheets, including TDS 17, 18, 21 & 31. It also includes information on timbers used in flooring, the nature of timber floors over various sub-floors, characteristics of floor finishes available and aspects relating to the natural movement that occurs in timber floors after they have been finished.

MOVEMENT IN TIMBER FLOORS

Prior to discussing timber flooring products it is important to have an understanding of the relationship between timber, humidity in the air surrounding it and the dimensional changes that occur as the result of changes in humidity. During weather conditions of consistently high humidity timber will absorb moisture from the surrounding air causing it to swell or increase in size. Conversely, during drier times when humidities are low, timber will shrink, reducing in size (refer Figure 1). Unless T&G flooring is placed in a permanently controlled environment, it will always move in response to changing environmental conditions. Gaps between individual T&G boards will occur as the floor shrinks in dry weather. Similarly during either persistent wet weather or times of the year of naturally high humidity floors will tend to be tighter showing fewer and smaller gaps.

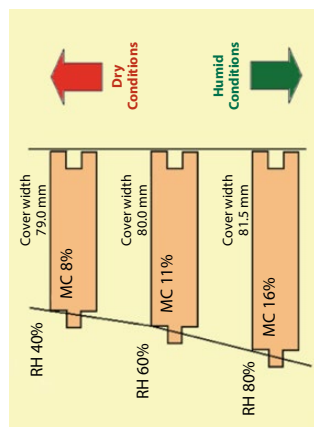


Figure 1 - Cover width variation with changing relative humidity.
Due to this, a 'continuous mirror finish' cannot be expected from floor finishes. Localised shrinkage may also occur when areas of flooring are exposed to heat sources such as fireplaces or sunlight through large doors or windows. The overall movement and rate of movement of timber varies depending on the timber species and cutting pattern of individual boards. Small moisture content variations in boards at the time of installation and differing conditions within the house (e.g. from sun exposure or fireplaces) will also cause variation in board movement.

gum veins and knots). The following table indicates the grades contained in relevant Australian Standards, but it should be noted that manufacturers often have their own grades. Often flooring that contains more feature is more moderately priced, however irrespective of the features present, there is no difference between the grades in terms of machining tolerances, permitted machining imperfections and moisture content.

It is therefore important to realise that the overall colour or blend of colour in a floor is dependent on the species or species mix chosen and the character of the floor, in terms of the features present (e.g. such as gum veins) is determined by the grade. If choosing an alternative species from the one originally considered, not only will the overall colour differ but the dominant type of feature may also

change. It is important that suppliers, installers and clients work closely together to ensure that the desired look of the flooring is clearly understood by all.

Hardness indicates a species resistance to indentation and abrasion. Damage to timber floors may occur due to continual movement of furniture, heavy foot traffic and in particular "siletto-heel" type loading. The selection of a hard timber species ensures improved resistance to indentation and abrasion. Soft timber species, if used in feature floors, can be expected to indent. Floor finishes will not significantly improve the hardness of timber flooring. In some species the hardness of younger growth material can also be much lower than mature timber of the same species, but this varies from species to species.

TABLE 1 - SPECIES PROPERTIES

Species	Colour	Hardness	Common cover widths (mm)	Thickness (mm)
Australian Hardwoods - to AS 2796 - Timber - Hardwood - Sawn and milled products Select Grade, Medium Feature Grade (Standard) and in some species High Feature Grade				
Spotted Gum	brown, dark brown, light sapwood	very hard	60, 80, 130	19, 12
Ironbark	dark brown or dark red brown	very hard	60, 80, 130	19, 12
Blackbutt	golden yellow to pale brown	very hard	60, 80, 130	19, 12
New England Blackbutt	straw to pale brown	very hard	60, 80, 130	19, 12
Forest Red Gum	dark brown or dark red brown	very hard	60, 80, 130	19, 12
Brushbox	mid brown even colour	hard	60, 80, 130	19, 12
Jarrah/dark	red brown	hard	67, 80, 125	19, 12
Karri	rich reddish-browns to pale pinks	hard	67, 80, 125	19, 12
Rose Gum	straw pink to light red	hard	60, 80, 130	19, 12
Sydney Blue Gum	pink to dark red	hard	60, 80, 130	19, 12
Tallowood	pale straw to light brown	hard	60, 80, 130	19, 12
Southern Blue Gum	pale brown with some pink	hard	63, 80, 85, 108, 133	19, 12
Stringybark	yellow brown with pink tinge	hard	63, 80, 85, 108, 133	19, 12
Messmate	Pale yellow to pale brown	moderately hard	63, 80, 85, 108, 133	19, 12
Tasmanian Oak	pale straw to light brown, pink	moderately hard	85, 108, 133	19, 13
Victorian Ash	pale straw to light brown, pink	moderately hard	63, 80, 85, 108, 133	19, 12
Manna/Ribbon Gum	pale straw pinks	moderately hard	63, 80, 85, 108, 133	19, 12
Imported Hardwoods - to AS 2796 - Timber - Hardwood - Sawn and milled products Select Grade, Medium Feature Grade (Standard) and in some species High Feature Grade				
Kwila / Merbau	dark brown	hard	80, 130	19
Northern Box	mid brown even colour	hard	80, 130	19
Cypress - to AS 1810 - Timber - Timber - Seasoned Cypress - Milled products Grades No.1 and No.2				
Cypress	straw sapwood, dark brown heartwood	moderately hard	62, 85, 98	20
Australian Softwoods - to AS 4785 - Timber - Softwood - Sawn and milled products except Araucaria (hoop pine) for which industry grades apply Standard Grade for AS 4785 Australian Softwoods				
Radiata	white to straw	soft	104	19, 21
Araucaria (Hoop)	straw	soft	87, 89, 102, 133, 152	19, 20, 21

Note

1. Not all species, width and thickness combinations are available. Check with suppliers before specifying.
2. The greater the width to thickness ratio of the floor, the more problematic that issues may arise with the floor occur.

Cover Widths, Profiles, Spans and End-Matching
 Typical cover widths and thicknesses for T&G strip flooring are as shown in Table 1. Actual cover widths may vary from those shown and should be checked with individual suppliers. Typical T&G profiles are shown in Figure 2. Some profiles are produced with grooves or rebates on the underside. Where the underside of a floor forms a ceiling, the board edges may be arised to form a 'v' joint profile. The secret nail profile is used for both top (face) nailing and secret fixing. When secret fixing, the cover width should be limited to a maximum of 85 mm. The 'standard profile' is used for face nailing and is the profile commonly found on wider boards. Some wider board flooring has the secret nail profile which allows temporary secret fixing prior to top (face) nailing.

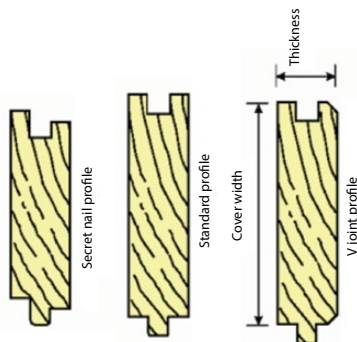


Figure 2. - Profiles

If the species or species mix contains a significant variation in colours, the appearance of the floor will differ depending on the cover width. Narrower boards tend to blend the colour variations together. Gapping between individual boards during drier times is also less with narrower boards than it is with wide boards. A board width of 100 mm or less will limit potential gap size and other movement effects such as cupping (edges of the board higher or lower than the centre). If wider flooring is used then wider gapping can be expected and under certain conditions some cupping becomes more likely.

End-matching is a process where a tongue and groove joint is provided at the ends of boards, the majority of flooring is now end-matched. For floors laid direct to joists or battens this allows joists to be placed between the joist or batten, resulting in less wastage than plain end flooring, which must have its ends fixed over the joist or batten. See Figure 3.

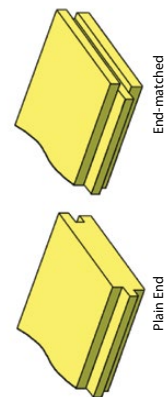


Figure 3. - Ends

Floor lengths
 Flooring is generally supplied in random length packs up to 4.8m in lengths. The average length is often between 1.8m and 2.1m. Packs of shorter overall length are also available from some suppliers to facilitate floors in high rise buildings that require product to be taken to the appropriate floor/level. The minimum length for timber being fixed to joists is 900 mm, based on a 450 mm joist spacing. In some instances, if it is known that the floor will be laid over a structural sub-floor, then lengths shorter than 900 mm may be provided.

Ordering flooring
 When ordering timber flooring, the following details should be provided to the timber supplier:-

- species (or species mix)
- grade
- profile and end-joint type
- cover width
- thickness
- quantity (in linear meters)

Flooring is generally supplied within the moisture content range from 9% to 14%. For larger jobs in specific environments a different range may be specified.

To calculate the linear meters of flooring required, the following method is recommended.

$$\text{Total length of flooring required} = \frac{\text{Area of floor (m}^2\text{)} \times 1000}{\text{Cover width (mm)} \times \text{Wastage}}$$

Allowance for waste should be approximately 5% for end-matched flooring and 10% for plain end butt jointed flooring.

FLOORS OVER DIFFERENT SUB-FLOORS

Depending on the T&G sub-floor supporting system (e.g. joists, plywood on slab etc.), timber floors will both feel and sound differently when walked on. Generally T&G timber floors laid over joists or battens will have more spring underfoot and there is likely to be some vertical movement at board edges and end-matched joints when walked on. Some squeaks can therefore be expected from most timber floors of this type. 'Squeaks' can occur from movement of one board edge against another or from boards moving on nails. Squeaks are often more prevalent during drier weather due to loosening at the joints. Floors that are laid over plywood on a slab will have a firmer feel underfoot and some areas may sound drummy. Similarly when floors are glued directly to concrete, the feel is firmer, and again some boards may sound drummy when walked on.

In cooler climates slab heating may be present and due to the direct heating effect on the timber and intermittent use of this type of heating system throughout the year, substantial seasonal movement can be expected. Although strip flooring can be used, if care is taken with appropriate product selection and installation practices, it may be preferable to use engineered timber flooring products where less dimensional changes would be expected. Even with these products care is still necessary.

FLOOR FINISH TYPES AND CHARACTERISTICS

Timber floor finishes can be grouped into four main categories. Penetrating oils and waxes, curing oils and alkyds, oil modified urethanes, and polyurethanes, the latter three polyurethanes being available in solventborne and waterborne. The polyurethanes are also available in yellowing (aromatic) and non-yellowing (aliphatic) types. All four categories are available in low to high VOC - volatile organic (solvent) content. Gloss level options can range from very high gloss to matt.

Performance parameters such as durability can vary significantly within a category as well as between categories. All categories can be recoated with refurbishment coats. The degree of surface preparation required prior to recoating will vary with time and coating type. As can be seen there is a large choice of coatings.

Penetrating Oils and Waxes

These are blends of natural oils and waxes, with added chemical salt driers. They are dissolved into spirit type solvents, with some of the very low volatility ones meeting the Green Building Council of Australia guidelines of 140 g/L VOC emission. This coating type can have high maintenance requirements necessitating regular application of metalised acrylic polishes. However, it is the natural look of the coated timber that is often the basis of selection. These types of coating will darken significantly on ageing and are slow to cure in cold weather. Currently they do not form a large part of the floor finish market.

Oil-Based Finishes - Curing Oils and Alkyds

Curing oils such as 'Tung or 'linseed', dissolved in mineral turpentine or white spirits, contain added chemical curing agents called metal driers. They are usually selected because they are of low cost, are of good edge bonding resistance and produce a rich timber colour. They can be very slow curing in cold weather, darken significantly with age, some types can also yellow in the dark or when covered. Durability is low compared to the other coating types and as such they require frequent maintenance with use of metalised acrylic polishes. Gloss levels vary from high gloss to satin and they have good edge bonding resistance.

Alkyds are produced from reacting curing oils with synthetic resin and dissolving into spirit based solvents. This results in durability being improved from a low to a moderate level. Maintenance requirements are considered to be of a medium level. Again, this is a lower cost option when compared to the more durable options following, providing good edge bonding resistance and a rich timber colour. Again, these more traditional types of finishes are not as commonly used as those outlined below.

Oil Modified Urethanes (UMOs)

These spirit based solventborne coatings combine an oil with a smaller amount of a urethane. The higher the urethane proportion, the less the oil properties such as higher flexibility and resistance to edge bonding. Conversely, the higher the urethane content, the higher the durability and the less the flexible. Gloss levels vary from high gloss to satin. In recent times waterborne UMOs have appeared on the market. Although higher cost than the solventborne, the waterborne UMOs have the advantage of having low VOC emissions.

All UMOs yellow significantly with age and their slow curing in cold weather must be considered. These coatings are often selected due to their intermediate cost, being isocyanate free, having good edge bonding resistance and being of intermediate durability.

Essentially they represent a coating that is reasonably durable and generally free from potential concerns such as edge bonding. As such they hold a moderate share of the market.

Polyurethane - Solventborne

This coating type provides the highest durability and film build (% solids) of all coating types as well as the highest gloss levels for the gloss options. However, there is a strong solvent smell on application and they are also of highest toxicity (isocyanate content) until the coating has cured. This is more so with two pack than the one pack moisture cure (MC) variety. With the correct use of personal protective equipment (PPE) this aspect is not considered an issue. There are yellowing (aromatic) and non-yellowing (aliphatic) varieties, with further options of high solids, and gloss levels from ultra high gloss to matt.

These coatings are often selected as they provide the best wear resistance or durability, resulting in lower maintenance, can be used with fast dry sealers, provide the highest gloss and film build option, are of intermediate cost and generally provide trouble free application. If requiring consideration, they do however have poorer edge bonding resistance. Currently, this type of finish is commonly used in Australia.

Polyurethane - Waterborne

This has the widest selection of sub-categories with acrylic - polyurethane blends, co-polymer urethane acrylates, 100% polyurethane resins, both yellowing and non-yellowing types, and blends of all the previous, with and without wax or silicone wear additives. As a result of this, there is a spread of properties including wear resistance from poor to arguably as good as solventborne polyurethane. Greater care is therefore necessary in selection and those without acrylic provide better wear resistance. They are available in one and two pack options, the latter utilizing either a lower toxicity hardener or a more toxic crosslinker, which is a consideration at the time of mixing. Matt through to gloss finishes are available and these finishes generally darken less with time.

These coatings are often selected based on being a healthier option for both contractor and premises occupier due to the absence of any strong solvent smells on application.

They also provide good edge bonding resistance. They are however of highest product cost, can provide a lighter timber appearance depending on the sealer and products used, and have a higher chance of tannin stain application marks. Rapid shrinkage in the floor and the associated stretching of the finish at board joints has on occasions caused the appearance of light coloured lines at board joints. These finishes have developed significantly over recent years and as such their market share is moderate and increasing.

TDS 11 - T&G Timber Flooring - General Information



Table 2 outlines the types of finish available and lists various properties of each.

TABLE 2 - COATING SELECTION CHART

Property	Timber Floor Coatings					
	Penetrating oil / wax	Oil based finishes	OMU	Polyurethane		Waterborne
				Solventborne	Waterborne	
	1 pack	2 pack	1 pack	2 pack	1 pack	2 pack
Wear resistance	Low	Low-Med	Medium	Very High	Med-High	Med-VH
Ability of the floor to accept careful foot traffic 3 days after coating. (Ave. Temp. 20°C)	Low	Low	Medium	High	Medium	High
Timber colour 'richness'	Low-High	High	High	High	Low-Med	Low-Med
Resistance of the coating to yellowing with age	Low	Low	Low	Low-High	Med-High	Med-High
Ability to cure in cold & dry weather	Low	Low	Medium	High	Medium	High
Ability to cure in cold and damp weather	Low	Low	Low	High	Low	Low
Edge bonding resistance	High	High	Med-High	Low	High	Med-High
Rejection resistance	High	Medium	Medium	Low-Med	Medium	Medium
VOC emission at application	Low-High	High	Med-High	High	Low	Low-Med
Inhalation hazard when coating is applied	Low	Medium	Medium	High	Low	Medium
Odour on application	Low-Med	Medium	Medium	High	Low	Low-Med
General product cost	Med-High	Low-Med	Medium	Medium	High	Very High

SAFE WORKING

Working with timber produces dust particles. Protection of the eyes, nose and mouth when sanding, sawing and planing is highly recommended. Refer to tool manufacturers for safe working recommendations for particular items of equipment.

DISPOSAL OF OFFCUTS AND WASTE

For any treated timber, do not burn offcuts or sawdust. Preservative treated offcuts and sawdust should be disposed of by approved local authority methods.

ACKNOWLEDGEMENT

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Timber Queensland Limited
 ACN 092 686 756 | ABN 50 092 686 756
 500 Brunswick Street, Fortitude Valley
 Brisbane Queensland 4006

Phone (07) 3254 1989
 Fax (07) 3358 7999
 PO Box 2014, Fortitude Valley BC Qld 4006
 admin@timberqueensland.com.au
 www.timberqueensland.com.au

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TECHNICAL DATA SHEET
ISSUED BY TIMBER QUEENSLAND
31
**ACCEPTABLE APPEARANCE
FROM TIMBER FLOORS**

RECOMMENDED PRACTICE // MARCH 2014



There are no standards that outline what an acceptable appearance of a timber floor should be. There are standards that relate to the manufacture of timber flooring and when recommended sanding and finishing practices are undertaken, there is a general level of acceptance of the finished product in the marketplace. Floors of the same species can differ markedly in their appearance depending on timber source, age of the tree, board cover width, the finish system used and the lighting in which the floor is viewed. Timber is a natural product that will shrink and swell in response to changes in atmospheric humidity, no building environment is the same as another, the sanding and finishing is not undertaken in a dust free factory environment and finishes may darken with time. Even with these variables a high standard in the finished floor is achievable.

ACCEPTABLE APPEARANCE

Colour, Species and Grade

The overall colour or blend of colour in a floor is dependent on the species or species mix chosen and the character of the floor. The features present in a floor, such as gum veins, is determined by those features permitted by the grade. Even when a single species is chosen there can be a wide variation in colour and it is also possible that a limited number of boards of a different species may be present due to similarity in appearance. It is also important to realize that grading rules do not cover either colour or colour variation. Grade names that do not align with the Australian Standards are likely to be similar to those in these standards but clarification should be sought regarding differences.

The grading process is rapid and relies on quick visual assessment where graders must assess the size and extent of a feature without relying on measurement. Due to this some inaccuracy in grading can occur that may result in a limited number of boards that are outside grade limits. The sanding of a floor can also increase the size of some features or cause features to appear that were not present prior to sanding. Consequently, some boards in a finished floor may not meet the specified grade description. The presence and development of such features needs to be acknowledged by those purchasing timber floors. When viewing a floor there is generally a clear difference between a floor that is of the incorrect grade and a floor where grade limits have been exceeded in some boards.

Where the number of boards in a floor that has features that exceed grade limits, in terms of size and number, are relatively few (less than 5%) and the overall appearance of the floor is in line with the chosen grade, no remedial work is considered necessary.

Grading also does not account for the distribution of features, in boards, between boards within a pack of flooring or within a finished floor. As such it is a reasonable expectation that the installer, when laying the floor, will provide a relatively even distribution of

colour and feature throughout the floor. With regard to colour, however, it must also be recognised that coating a floor highlights colour differences and the extent of the change is at times not easy to discern. Similarly it can be expected that board lengths will be relatively evenly distributed in the floor and that groups of short boards or board ends will not be frequently clustered together.

Even timber surface

The following outlines some problems that affect the surface of the boards and these should not generally occur in timber floors. However, specific heat sources from appliances or sun exposure through large uncovered windows may induce some cupping of boards in the affected area. Similarly, wide boards or thinner overlay boards may also show some slight cupping or peaking in certain house environments. It should also be recognised that the actions or inaction of owners can contribute or even cause these to occur.

- Cupping - boards with their edges either higher or lower than the centre of the board. Heat in a specific location or a very dry environment above the floor may result in cupping. Moist sub-floor spaces can also cause boards to cup. Cupping is more likely to be observed in overlay flooring and standard thickness boards that are wider than 100 mm. To some degree a small amount of observable cupping may occur in some locations within a dwelling (e.g. sun exposed floor) where these types of flooring are used.
- Peaking - this has the appearance of cupping but is the result of expansion pressure in the floor.
- Tenting - two adjacent boards, where the adjoining edge has lifted above the level of the adjacent flooring. This is often associated with high moisture beneath the floor and can be from many causes.
- Buckling - a section of flooring containing a number of boards that is raised above an adjacent section.

- Crowning - floor boards that are flat on their lower surfaces but where the upper surface has its edges lower than the centre of the board. This may occur if a floor is cupped (board edges up) at the time of sanding. Crowning does not become apparent until some months after finishing.

Note: Floors exposed to heat sources after occupancy (e.g. no curtains, fireplaces, vents, from appliances, houses closed up for extended periods) may cause boards to cup. Cupping and shrinkage from such sources may be the owner's responsibility.

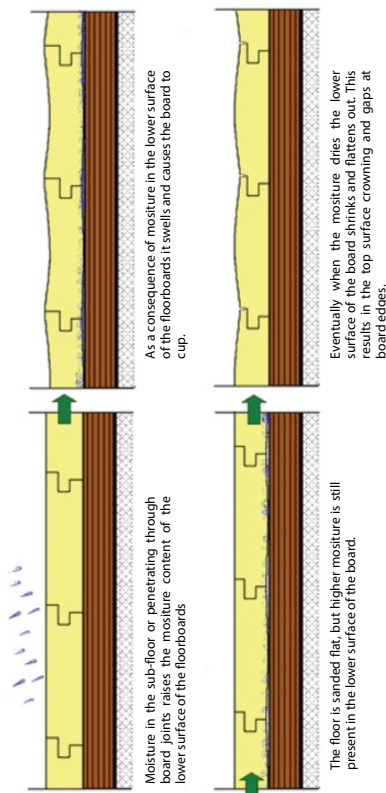


Figure 1 - The process of crowning

Relatively even gapping between boards in areas not exposed to specific heat sources

During drier times of the year, shrinkage gaps between boards may average 0.75 mm for boards of a cover width of 80 mm. For wider boards, proportionally wider average gapping can be expected. Some gaps will be larger than the average gap size and others smaller, however the appearance generally indicates gapping between most boards. An appearance can be expected that is free from split boards and wide gaps between boards that may be irregularly spaced across the floor. Irregularly spaced wide gapping may occur from either the edges of boards being bonded together or from a proportion of boards being high in moisture content at the time of laying. The provision of expansion gaps as part of the installation process and evident throughout the life of the floor is acceptable.

Limited vertical movement at T&G joints

Flooring is manufactured with the board tongue narrower than the groove. This is necessary so that boards will fit together during installation. When floor boards are laid over joists in particular, some differential vertical movement may occur between adjacent boards, when a load is applied to an individual board. This is due to the clearance between the tongue and the groove. The clearance should not exceed 0.6 mm.

Minimal Squeaking

A small amount of noise can be expected from most timber floors when walked on. Noises can occur from movement of one board edge against another or from boards moving on nails. A floor is often more noisy during drier weather due to loosening at the joints.

Indentations

Timber strip floors can be expected to show some indentations depending on the hardness of the species used, volume of traffic and foot wear worn.

A Finish with Minimal Contamination and Sanding Marks

A finish similar to that of fine furniture should not be expected. Sanded and polished timber strip floors are not finished in a factory environment and different pieces of flooring will sand differently. The home environment is also not dust free. However, the finished floor can be expected to have an even appearance free from heavy sanding marks, blooming or frequent air bubbles in the surface. A minimal level of contaminants, minor sanding marks and small depressions of the finish at board edges and in nail holes etc. may be visible. The perimeter and other hard to get at places are more likely to contain these irregularities. Due to this a mirror finish is an unachievable expectation. Some finishes will also yellow with time and if rugs are moved, a contrast in the depth of colour can be expected.



TDS 31 - Acceptable Appearance from Timber Floors



When floors are inspected for imperfections, the floor is to be inspected during daylight hours with lighting on. The overall assessment of the floor is from a standing position with the floor viewed from positions that are usually occupied by people. Internal and external reflections in areas not usually covered by furniture should be assessed. Acceptability relies on judgment that takes into consideration the effect of lighting on noticeable surface imperfections as well as initial wear of the floor, which can cause some imperfections to significantly lessen or disappear. A floor is subject to much heavier wear than furniture and although a good quality finish can be expected, the same finish quality to furniture should not be expected.

Some imperfections that could be expected to some degree in a floor but which should also be assessed include: sanding quality; gloss variation; dust, insects and debris; bubbles and gel particles and coat leveling.

SAFE WORKING

Working with timber produces dust particles. Protection of the eyes, nose and mouth when sanding, sawing and planing is highly recommended. Refer to tool manufacturers for safe working recommendations for particular items of equipment.

DISPOSAL OF OFFCUTS AND WASTE

For any treated timber, do not burn offcuts or sawdust. Preservative treated offcuts and sawdust should be disposed of by approved local authority methods.

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Timber Queensland Limited
ACN 092 686 756 | ABN 50 092 686 756
500 Brunswick Street, Fortitude Valley
Brisbane Queensland 4006

Phone (07) 3254 1989
Fax (07) 3358 7999
PO Box 2014, Fortitude Valley BC Qld 4006
admin@timberqueensland.com.au
www.timberqueensland.com.au

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What to expect from your timber floor

What you need to understand when purchasing a timber floor?

When purchasing a solid timber floor, you'll need to consider aspects such as colour, grade, board width and the finish to be applied. Photos and samples do not always provide a good representation of colour or grade and it's important to realise that floors of the same species can differ markedly in both colour and appearance. Grading rules don't cover colour or colour variation, but do significantly influence the appearance, with some grades including the character of the tree's history with larger gum veins, knots and other features. You have many choices to make, so spend time with your **ATFA** member supplier or installer to know and understand your new floor.



What you should expect when your floor is being installed?

Your timber floor may be installed over a concrete slab, on joists or over a structural sheet floor of particleboard or plywood. You may live in a drier location, on farmland or up in the moist tropics. You may have air-conditioning, heating systems or expanses of glass with a lot of direct sunlight. To accommodate all these variables different methods of installation are going to be appropriate to different homes and therefore practices will differ between your installation and others.

Your **ATFA** member installer will be able to advise you on what is appropriate for your home and how the desired flooring product is likely to perform in your house. Your **ATFA** installer will specifically consider the following at the time of installation:–

- That the product is correct to lay by checking pack labels for size and grade, damage that may have occurred in transit, board moisture contents, cover widths and tolerances.
- That conditions are correct to lay the floor. This includes assessing the location, dwelling environment, sub-floor conditions and sub-floors.

From this the most appropriate fixing method, expansion allowance requirements, need for possible acclimatisation, and appropriate finish systems can be discussed.

What to expect from your timber floor

What happens when it is time to sand and polish the floor?

The sanding and finishing is an exciting time as all the rich beauty and character of the floor is truly revealed. At this time the ATFA member sander and finisher may have to contend with conditions that are prone to dust or which can affect the curing of the finish system, and also timbers that may prefer some types of finish more than others. The width of the boards, movement that may have already occurred in the floor, as well as the overall condition of the floor, all influence the most appropriate finish to be applied. Again, it is important to listen to your ATFA member sander and finisher as a different finish system may be recommended at this stage in order to achieve a high standard of appearance. You should note however that the floor is not being sanded and finished in a factory environment and therefore it is unrealistic to expect a similar finish to that of fine furniture. Some finishing imperfections do occur in all floors. Down lights often highlight such imperfections and some dust may be trapped in the finish even when appropriate precautions are taken. Such imperfections do not generally detract from the overall beauty and appearance of your floor.

The finished floor and ongoing care.

Once handed over your floor can be walked on but full curing and hardening will not occur for a few weeks and it is recommended that rugs are not laid until this time. Similarly, it should be ensured that the feet of chairs and tables etc have felt pads or protectors applied. Heavy items of furniture need to be carefully positioned without dragging them. Curtains or similar should be used to protect floor areas from intense sunlight and mats both inside and out are an effective means of trapping grit which can scratch floor surfaces. Seasonally, your floor will also adjust to the climate and is likely to show small shrinkage gaps at board edges particularly during drier times of the year. It should also be noted that over time, both the floor finish and the timber that is exposed to light will darken and therefore floors will often be of a lighter tone under rugs.

A regular cleaning program is needed to ensure that your floor remains in pristine condition. Antistatic mops are effective for collecting dust and grit, and vacuum cleaners (*provided the brushes are not worn*) are also effective. Damp mopping on say a monthly basis provides an effective deep clean and when carried out with the recommended mild cleaners, it will not harm the floor. With appropriate care you will enjoy a floor of lasting natural timber beauty.

